

Comments of the International District Energy Association on Development of Guidance on Updating Output Allowance System

Mark Spurr
Legislative Director, IDEA
January 19, 1999

What are sources of information that States need in order to determine and update allocations on a periodic basis?

Advantages and disadvantages of measuring net vs. gross output

Gross electricity generated in a plant might be used inside the plant for auxiliary requirements relating to the generation of electricity and/or thermal energy (e.g., pollution control devices) or for end-uses which would otherwise require electricity generated elsewhere (e.g., industrial processes or chillers). Similarly, gross thermal generation might be used inside the plant for auxiliary requirements (e.g., turbine-driven pumps) or for end-uses which would otherwise require thermal generation by other means (e.g., industrial processes or steam-driven chillers). Some of the electricity might be exported to the power grid, and some of the thermal energy might be exported to another building or a district heating system.

If allocations are done on the basis of gross output, plant configurations with high auxiliary requirements (e.g., steam turbine power plants compared to combustion turbines) would have an advantage because they wouldn't be penalized for these losses. Similarly, plants with low auxiliary energy requirements would realize an advantage with a net output approach.

Measurement of net output is more difficult on a unit level because it would be hard to measure and allocate auxiliary power or steam requirements. Measurement of net output on a plant level avoids this problem; however, this would penalize plants in which power or thermal generation is consumed within the boundaries of the plant for requirements which would otherwise require generation from other sources (e.g., thermal energy or power for industrial processes). Then the plant wouldn't get any credit for the power generation, even though they are offsetting generation (and emissions) at other sites.

Ideally, allocation of allowances for electricity output should be based on the sum of gross electricity outputs from all units in the plant minus the sum of the electricity consumption for auxiliary requirements associated with generating power or steam. Similarly, allocation of allowances for steam output should be based on the sum of gross electricity outputs from all units in the plant minus the sum of the steam consumption for auxiliary requirements associated with generating power or steam. This is essentially $\text{Net output} = \text{Gross output} - \text{Auxiliary consumption}$, but it is important to clarify that Net output isn't simply determined based on the plant boundaries; only the auxiliary electric or thermal consumption associated with production of electricity and/or thermal energy should be deducted from the gross output

to determine net output.

Can net generation be measured at the point of sale?

It is not practical to measure net generation at the point of sale, for either electricity or thermal energy. Tracking and metering costs would be prohibitive because the number of buyers is too large and the size of many of the buyers would be too small.

How can EPA allocate based on generation measured at the plant level or the generator or turbine level, when EPA allowance tracking system tracks at the unit (boiler or turbine) level and EPA's emission tracking system stacks emissions and heat input at the unit and stack levels?

Allocations can be made based on total plant output, as discussed above. Any unit used for generating a portion of this output, and any stack handling emissions from these sources, would be part of the compliance program. For compliance, plant owners must hold sufficient allowances for the subject stacks. We don't see any problem here.

How is steam output measured? With what equipment? In what units?

Steam output in a plant is measured in thousand pounds of steam per hour (Mlb/hour) at a measured pressure and temperature. The pressure and temperature data determine the energy content per pound of steam. Information on steam metering will be provided.

Is mechanical output going to be a form of output by either industrial or electrical generating units?

It is doubtful that mechanical energy will be an output of any but a few of the facilities meeting the size criteria.

Comparing and converting heating input, steam output and electrical output

Should steam output be converted to electrical output? If so, which method should be used to convert steam energy to electrical power equivalent? If steam energy were not converted, how would emissions limitations be treated for cogenerators?

Thermal output should not be converted or compared to power output. Conversion of thermal output to electric output requires a variety of case-specific technical parameters and assumptions.

It is not necessary or appropriate to equate the two in a generic way. CHP facilities should receive the same allocations as separate conventional facilities providing the same electricity and thermal service.

Allowances for thermal output should come from the non-EGU pool (at a lbs/output unit rate determined for thermal generation) and the allowances for power output should come from the EGU pool (at a lbs/output unit rate determined for power generation). Each

electricity generator should receive allowances from the EGU allowance pool proportional to its electric output, and each thermal generator should receive allowances from the non-EGU pool proportional to its thermal output.

The issue has been raised that an inappropriate “transfer” occurs when a CHP facility draws some allowances from the non-EGU pool even though its baseline was counted completely in the EGU pool. We do not see this as a problem or concern. An updating output allocation process is an inherently a dynamic one, with reallocation occurring as a matter of course.